

REMARKS

It is believed that this Amendment is fully responsive to the Office Action dated **July 14, 2003**.

Claims 1-23 are pending in the application.

Claim Rejections under 35 USC §103

Claims 1, 2, 5-7 and 9-23 are rejected under 35 USC §103(a) as being unpatentable over Ouderkirk et al. (U.S. Patent No. 6,124,971) and further in view of Bahadur et al. (*Liquid Crystals, Applications and Uses*, Volume 1).

Claims 3, 4, 8 and 19 are rejected under 35 USC §103(a) as being unpatentable over Ouderkirk in view of Bahadur as applied to claims 1, 2, 5-7 and 9-22, above, and further in view of Hisatake et al. (U.S. Patent No. 5,731,858).

The outstanding Office action has stated that the rejected claims do not include the use of the reflected light, a structure of the polarizing film, and metallic color display. To overcome the rejection, independent claim 1 has been further amended to recite:

“a color filter disposed on one of a visible side of the absorption-type polarizing film, and between the absorption-type polarizing film and the reflection-type polarizing film[.], for providing color to light transmitted through the color filter,

wherein the reflection-type polarizing film is a sheet-shaped member of a metallic tone and having a high reflection characteristic which reflects incoming light linearly polarized in a direction orthogonal to the transmission axis toward an incoming side; and

the absorption-type polarizing film and the liquid crystal cell are disposed such that lights transmitted from visible sides through a voltage applied area and a non-voltage applied area of the liquid crystal cell are linearly polarized in a

direction orthogonal to each other and the transmission axis of the reflection-type polarizing film is in a direction substantially parallel with either one of the directions of the linearly polarized lights that are orthogonal to each other."

Various aspects of the amended claim are supported as shown hereinbelow:

"... which reflects incoming light linearly polarized in a direction orthogonal to the transmission axis toward the incoming side;": Page 18, line 5-13, and Fig. 10;

"metallic tone" : Page 18, line 13, and page 19, line 4, 13;

" high reflection characteristic": Page 18, line 21-24;

"a sheet-shaped member": Page 11, line 8-13;

"... are disposed such that lights transmitted from visible sides through a voltage applied area and a voltage non-applied area of the liquid crystal cell are changed to lights linearly polarized in a direction orthogonal to each other": Page 16, line 20 through page 17, line 4;

"the transmission axis of the reflection-type polarizing film is in a direction substantially parallel with either of the directions of the lights linearly polarized which are orthogonal to each other": Page 17, line 16 through page 19, line 17;

"for coloring light transmitted through the color filter": Page 12, line 14-15, and page 27, line 27 through page 28 line 2.

The newly added features are also graphically depicted as shown by way of examples in Figures 1, 9 and associated written description, wherein there are indeed disclosed "a liquid crystal display 10 comprising: a liquid crystal cell 12 having a liquid crystal layer sealed in-between a pair

of transparent substrates 1, 2 thereof, having an electrode 5, 6 on each of the inner surfaces thereof, facing each other; an absorption-type polarizing film 14 disposed on a visible side of the liquid crystal cell 12, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and absorbing light linearly polarized in a direction orthogonal to the transmission axis thereof; a reflection-type polarizing film 16 disposed on a side of the liquid crystal cell, opposite from the visible side thereof, for transmitting light linearly polarized in a direction parallel with a transmission axis thereof, and reflecting light linearly polarized in a direction orthogonal to the transmission axis thereof; and a color filter disposed on one of a visible side of the absorption-type polarizing film 14, and between the absorption-type polarizing film and the reflection-type polarizing film 16, for providing color to light transmitted through the color filter 18, wherein the reflection-type polarizing film 16 is a sheet-shaped member of a metallic tone and having a high reflection characteristic which reflects incoming light linearly polarized in a direction orthogonal to the transmission axis toward an incoming side; and the absorption-type polarizing film 14 and the liquid crystal cell 12 are disposed such that lights transmitted from visible sides through a voltage applied area and a non-voltage applied area of the liquid crystal cell 12 are linearly polarized in a direction orthogonal to each other and the transmission axis of the reflection-type polarizing film 16 is in a direction substantially parallel with either one of the directions of the linearly polarized lights that are orthogonal to each other.

Regarding the structure of the polarizing film and the use of the reflected light, the amended claim language conveys that the reflection-type polarizing film has a sheet shape to reflect the linearly polarized light in a specific direction so as to return to an incoming side, and

to reflect in metallic tone. The amended claim also clearly distinguishes the present invention from **Bahadur** in which a MacNeille prism being a thick member is a device removing reflected linearly polarized light to a side of the incoming light path.

Independent claim 1, as newly amended, also recites that when the linearly polarized light passed through the absorption-type polarizing film and the liquid crystal cell at a voltage applied area (ON area) and a non-voltage-applied area (OFF area) of the liquid crystal cell, the transmitted polarized light are different from each other in their polarized direction by 90° .

Furthermore, one of the polarized directions is parallel with the transmission axis of the reflection-type polarizing film. Accordingly, the polarized light transmitted one of the ON area and the OFF area of the liquid crystal cell passing through the reflection-type polarizing film and show the colors thereof, and the polarized light transmitted to the other area is reflected in metallic tone to a visible side by the reflection-type polarizing film to a metallic reflected light. The metallic reflected light is colored by a color filter disposed on the visible side of the reflection-type polarizing film. As a result, the coloring effect is remarkably different between the ON area (e.g. a character displaying area) and the OFF area (e.g. background of characters). Either one of the areas displays with a metallic color partly due to a characteristic of the reflection-type polarizing film explained above, yet the other area would display with a remarkably different color.

The present invention provides a significantly bright display by utilizing both a color filter and a reflection-type polarizing film in a liquid crystal display device. Moreover, bright color display can be provided even when a backlight is used in a dark environment. **Bahadur**

discloses a color filter, but does not disclose or suggest that light colored by a color filter can yield remarkably strong color with metallic tone by using a reflection-type polarizing film.

Reconsideration and withdrawal of these rejections are respectfully requested.

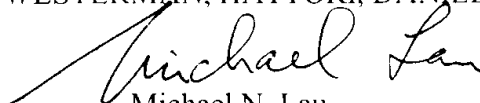
Conclusion

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 502866.

Respectfully submitted,

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